

SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (i) APPLICANT: Goldstein, Gideon
- (ii) TITLE OF INVENTION: Methods and Compositions for Impairing Multiplication of HIV-1
- (iii) NUMBER OF SEQUENCES: 124
- (iv) CORRESPONDENCE ADDRESS:  
(A) ADDRESSEE: Howson and Howson  
(B) STREET: Spring House Corporate Cntr., P.O. Box 457  
(C) CITY: Spring House  
(D) STATE: PA  
(E) COUNTRY: USA  
(F) ZIP: 19477
- (v) COMPUTER READABLE FORM:  
(A) MEDIUM TYPE: Floppy disk  
(B) COMPUTER: IBM PC compatible  
(C) OPERATING SYSTEM: PC-DOS/MS-DOS  
(D) SOFTWARE: PatentIn Release #1.0, Version #1.30
- (vi) CURRENT APPLICATION DATA:  
(A) APPLICATION NUMBER: US  
(B) FILING DATE:  
(C) CLASSIFICATION:
- (vii) PRIOR APPLICATION DATA:  
(A) APPLICATION NUMBER: US 08/893,853  
(B) FILING DATE: 11-JUL-1997
- (viii) ATTORNEY/AGENT INFORMATION:  
(A) NAME: Bak, Mary E.  
(B) REGISTRATION NUMBER: 31,215  
(C) REFERENCE/DOCKET NUMBER: GGP2AUSA
- (ix) TELECOMMUNICATION INFORMATION:  
(A) TELEPHONE: 215-540-9200  
(B) TELEFAX: 215-540-5818

(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 72 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: protein
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser  
1 5 10 15

Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe  
20 25 30

His Cys Gln Val Cys Phe Thr Thr Lys Gly Leu Gly Ile Ser Tyr Gly  
35 40 45

Arg Lys Lys Arg Arg Gln Arg Arg Arg Ala Pro Gln Asp Ser Gln Thr  
50 55 60

His Gln Val Ser Leu Ser Lys Gln  
65 70

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 912 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: join(1..876, 883..912)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

GAG CTC TAC AAA TCC GGG GAT CCG GGT GAA GAT CCG CGT TTA GAG CCG	48
Glu Leu Tyr Lys Ser Gly Asp Pro Gly Glu Asp Pro Arg Leu Glu Pro	
1 5 10 15	
TGG AAA CAC CCG GGT TCT GGT TCT GTT GAC CCT AAC CTT GAA CCT TGG	96
Trp Lys His Pro Gly Ser Gly Ser Val Asp Pro Asn Leu Glu Pro Trp	
20 25 30	
AAG CAT CCT GGC AGC TCC GGA GTC GAT CCC AAA CTC GAG CCC TGG AAA	144
Lys His Pro Gly Ser Ser Gly Val Asp Pro Lys Leu Glu Pro Trp Lys	
35 40 45	
CAC CCC GGA AGT TCG GGG GTA GAC CCA TCT CTG GAA CCA TGG AAG CAT	192
His Pro Gly Ser Ser Gly Val Asp Pro Ser Leu Glu Pro Trp Lys His	
50 55 60	
CCA GGG AGT GGT AGC GTG AAT CCG TCA TTA GAG CCG TGG AAA CAC CCG	240
Pro Gly Ser Gly Ser Val Asn Pro Ser Leu Glu Pro Trp Lys His Pro	
65 70 75 80	
GGT TCA TCT GGA GTT GAT CCT CGC TTG GAA CCT TGG GAG CAT CCT GGT	288
Gly Ser Ser Gly Val Asp Pro Arg Leu Glu Pro Trp Glu His Pro Gly	
85 90 95	
TCG TCC GGT GTA GAC CCC CGA CTT GAG CCC TGG AAT CAC CTC GGG AGT	336
Ser Ser Gly Val Asp Pro Arg Leu Glu Pro Trp Asn His Leu Gly Ser	
100 105 110	

TCA GGC GTA GAT CAT CGG CTC GAA CCA TGG AAA CAT CCA GGT TCT GGA	384
Ser Gly Val Asp His Arg Leu Glu Pro Trp Lys His Pro Gly Ser Gly	
115 120 125	
GAT CTG CGC CAG CGG CGA CGT ACT CCT CAG GAT TCT GGA TCT CGA CAA	432
Asp Leu Arg Gln Arg Arg Arg Thr Pro Gln Asp Ser Gly Ser Arg Gln	
130 135 140	
CGT CGG CGC CCT CCC CAA GAC TCC TCA GGA CGG CAG CGC CGA CGA CCC	480
Arg Arg Arg Pro Pro Gln Asp Ser Ser Gly Arg Gln Arg Arg Arg Pro	
145 150 155 160	
CCA CAG GGT TCA GGT TCA CGT CAA CGA CGC GGT CCA CCC CAA GGC TCG	528
Pro Gln Gly Ser Gly Ser Arg Gln Arg Arg Gly Pro Pro Gln Gly Ser	
165 170 175	
GGT TCG CGC CAG CGG CGA CGT CCG CCT CAG AAC TCT AGT GGA CGA CAA	576
Gly Ser Arg Gln Arg Arg Arg Pro Pro Gln Asn Ser Ser Gly Arg Gln	
180 185 190	
CGT CGG CGC TCT CCC CAA GAT TCC GGC GGG CGG CAG CGC CGT CGA TCA	624
Arg Arg Arg Ser Pro Gln Asp Ser Gly Gly Arg Gln Arg Arg Arg Ser	
195 200 205	
CCA CAG AAC TCA GGT GGG CGT CAA CGA CGC CGG ACT CCG CAA TCT TCA	672
Pro Gln Asn Ser Gly Gly Arg Gln Arg Arg Arg Thr Pro Gln Ser Ser	
210 215 220	
TCC GGC CGC CAG CGG CGA CGT GCC CAT CAG AAT AGC GGC AGC CGA CAA	720
Ser Gly Arg Gln Arg Arg Arg Ala His Gln Asn Ser Gly Ser Arg Gln	
225 230 235 240	
CGT CGG CGC GCA CAC CAA GAC AGC AGT GGG CGG CAG CGC CGT CGA GCG	768
Arg Arg Arg Ala His Gln Asp Ser Ser Gly Arg Gln Arg Arg Arg Ala	
245 250 255	
CCT GAA GAT AGT GGT TCT CGT CAA CGA CGC CGG GCT CCC CCT GAC AGC	816
Pro Glu Asp Ser Gly Ser Arg Gln Arg Arg Arg Ala Pro Pro Asp Ser	
260 265 270	
TCC GGA CGC CAG CGG CAA CGT GCA CCA GAT AGT TCC TCA GGT CAT CAC	864
Ser Gly Arg Gln Arg Gln Arg Ala Pro Asp Ser Ser Ser Gly His His	
275 280 285	
CAC CAT CAT CAC TAATAA GAA TTC GGA TCC TCT AGA GTC GAC AAG CTT	912
His His His His Glu Phe Gly Ser Ser Arg Val Asp Lys Leu	
290 295 300	

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 302 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

Glu	Leu	Tyr	Lys	Ser	Gly	Asp	Pro	Gly	Glu	Asp	Pro	Arg	Leu	Glu	Pro	1	5	10	15
Trp	Lys	His	Pro	Gly	Ser	Gly	Ser	Val	Asp	Pro	Asn	Leu	Glu	Pro	Trp	20	25	30	
Lys	His	Pro	Gly	Ser	Ser	Gly	Val	Asp	Pro	Lys	Leu	Glu	Pro	Trp	Lys	35	40	45	
His	Pro	Gly	Ser	Ser	Gly	Val	Asp	Pro	Ser	Leu	Glu	Pro	Trp	Lys	His	50	55	60	
Pro	Gly	Ser	Gly	Ser	Val	Asn	Pro	Ser	Leu	Glu	Pro	Trp	Lys	His	Pro	65	70	75	80
Gly	Ser	Ser	Gly	Val	Asp	Pro	Arg	Leu	Glu	Pro	Trp	Glu	His	Pro	Gly	85	90	95	
Ser	Ser	Gly	Val	Asp	Pro	Arg	Leu	Glu	Pro	Trp	Asn	His	Leu	Gly	Ser	100	105	110	
Ser	Gly	Val	Asp	His	Arg	Leu	Glu	Pro	Trp	Lys	His	Pro	Gly	Ser	Gly	115	120	125	
Asp	Leu	Arg	Gln	Arg	Arg	Arg	Thr	Pro	Gln	Asp	Ser	Gly	Ser	Arg	Gln	130	135	140	
Arg	Arg	Arg	Pro	Pro	Gln	Asp	Ser	Ser	Gly	Arg	Gln	Arg	Arg	Arg	Pro	145	150	155	160
Pro	Gln	Gly	Ser	Gly	Ser	Arg	Gln	Arg	Arg	Gly	Pro	Pro	Gln	Gly	Ser	165	170	175	
Gly	Ser	Arg	Gln	Arg	Arg	Arg	Pro	Pro	Gln	Asn	Ser	Ser	Gly	Arg	Gln	180	185	190	
Arg	Arg	Arg	Ser	Pro	Gln	Asp	Ser	Gly	Gly	Arg	Gln	Arg	Arg	Arg	Ser	195	200	205	
Pro	Gln	Asn	Ser	Gly	Gly	Arg	Gln	Arg	Arg	Arg	Thr	Pro	Gln	Ser	Ser	210	215	220	
Ser	Gly	Arg	Gln	Arg	Arg	Arg	Ala	His	Gln	Asn	Ser	Gly	Ser	Arg	Gln	225	230	235	240
Arg	Arg	Arg	Ala	His	Gln	Asp	Ser	Ser	Gly	Arg	Gln	Arg	Arg	Arg	Ala	245	250	255	
Pro	Glu	Asp	Ser	Gly	Ser	Arg	Gln	Arg	Arg	Arg	Ala	Pro	Pro	Asp	Ser	260	265	270	
Ser	Gly	Arg	Gln	Arg	Gln	Arg	Ala	Pro	Asp	Ser	Ser	Ser	Gly	His	His	275	280	285	

His His His His Glu Phe Gly Ser Ser Arg Val Asp Lys Leu  
 290 295 300

(2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Arg Lys Lys Arg Arg Gln Arg Arg Arg  
 1 5

(2) INFORMATION FOR SEQ ID NO:5:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Gly Arg Gly Asp Ser Pro  
 1 5

(2) INFORMATION FOR SEQ ID NO:6:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Val Asp Pro Arg Leu Glu Pro  
 1 5

(2) INFORMATION FOR SEQ ID NO:7:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Val Asp Pro Lys Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Val Asp Pro Ser Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:9:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Val Asp Pro Asn Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:10:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

- (ix) FEATURE:  
(A) NAME/KEY: Binding-site  
(B) LOCATION: 6  
(D) OTHER INFORMATION: /note= "an amide is attached to the  
Ser in position 6"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Trp Lys His Pro Gly Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:11:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Gly Pro Arg Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:12:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Ala Pro Arg Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:13:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

His Pro Arg Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:14:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Asp Pro Gly Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Asp Pro Arg Ile Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Asp Pro Arg Leu Gly Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

Asp Pro Arg Leu Glu Ala  
1 5

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear



(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

Asn Pro Ser Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

Arg Arg Ala Pro Gln Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

Gln Arg Arg Arg Ala Pro Gln Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:21:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Gln Arg Arg Arg Ala His Gln Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:22:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

Gln Arg Arg Arg Ala Pro Pro Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:23:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

Arg Arg Pro Pro Gln Asp Asn  
1 5

(2) INFORMATION FOR SEQ ID NO:24:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Arg Arg Ala Pro Gln Asp Arg  
1 5

(2) INFORMATION FOR SEQ ID NO:25:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Arg Gly Ala Pro Gln Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:26:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Arg Arg Ala Pro Glu Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:27:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Arg Arg Ala Ser Gln Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:28:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 13  
(D) OTHER INFORMATION: /note= "Ser in position 13 is  
optionally modified with NH2"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:29:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

Arg Gln Arg Arg Arg Ala Pro Gln Asp Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:30:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 4 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

Ser Gly Ser Gly  
1

(2) INFORMATION FOR SEQ ID NO:31:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 12 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

Val Asp Pro Arg Leu Pro Trp Lys His Pro Gly Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:32:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 11 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

Asp Pro Arg Leu Pro Trp Lys His Pro Gly Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:33:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

Val Asp Pro Arg Leu Pro Trp  
1 5

(2) INFORMATION FOR SEQ ID NO:34:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

Val Asp Pro Arg Leu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:35:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 5 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

Val Asp Pro Arg Leu  
1 5

(2) INFORMATION FOR SEQ ID NO:36:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

1008608 023802

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 1

(D) OTHER INFORMATION: /note= "Xaa in the first position may be absent, or may be 1-5 aa, which may be optionally modified with a lower alkyl or a lower alkanoyl, or Xaa may be X-Pro, wherein X is Glu or Asp."

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 2

(D) OTHER INFORMATION: /note= "Val in position 2 is optionally modified with a lower alkyl or a lower alkanoyl when Xaa in the first position is absent."

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 5

(D) OTHER INFORMATION: /note= "The 5th position amino acid can be Arg, Lys Ser or Asn"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 8

(D) OTHER INFORMATION: /note= "Pro in position 8 is optionally amidated, when it is the C terminal amino acid."

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 9

(D) OTHER INFORMATION: /note= "The 9th position amino acid may be absent or a sequence of 1-14 amino acids amidated at the carboxyl terminus."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

Xaa Val Asp Pro Xaa Leu Glu Pro Xaa  
1 5

(2) INFORMATION FOR SEQ ID NO:37:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 13 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 1  
 (D) OTHER INFORMATION: /note= "Xaa in the first position  
may be absent or may be optionally 1-5 amino acids, optionally  
modified with a lower alkyl or lower alkanoyl at the N  
terminus."

(ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 2  
 (D) OTHER INFORMATION: /note= "Lys in position 2 is  
optionally modified with a lower alkyl or a lower alkanoyl, when  
the first position Xaa is absent."

(ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 3  
 (D) OTHER INFORMATION: /note= "The 3rd position amino acid  
can be either Gly or Ala."

(ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 12  
 (D) OTHER INFORMATION: /note= "Lys in position 12 is  
optionally amidated, when it is the C terminal amino acid."

(ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 13  
 (D) OTHER INFORMATION: /note= "The 13th position amino  
acid may be absent or may be a sequence of 1-5 additional amino  
acids, optionally substituted with an amide."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

Xaa	Lys	Xaa	Leu	Gly	Ile	Ser	Tyr	Gly	Arg	Lys	Lys	Xaa
1				5					10			

(2) INFORMATION FOR SEQ ID NO:38:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 8 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 1  
 (D) OTHER INFORMATION: /note= "The first position Xaa can  
be absent or a sequence of 1-3 aa, optionally modified with a  
lower alkyl or lower alkanoyl; or it can be Gln-Arg, optionally  
modified with a lower alkyl or lower alkanoyl."

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 2  
    (D) OTHER INFORMATION: /note= "Arg in position 2 is optionally modified with a lower alkyl or a lower alkanoyl, when it is the N terminal amino acid."

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 4  
    (D) OTHER INFORMATION: /note= "The 4th position amino acid can be Ala, Pro, Ser or Gln."

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 5  
    (D) OTHER INFORMATION: /note= "The 5th position amino acid can be Pro or His."

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 6  
    (D) OTHER INFORMATION: /note= "The 6th position amino acid can be Gln or Pro."

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 7  
    (D) OTHER INFORMATION: /note= "The 7th position amino acid can be Asp, Asn, Gly or Ser."

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 8  
    (D) OTHER INFORMATION: /note= "Ser in position 8 is optionally amidated."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

Xaa Arg Arg Xaa Xaa Xaa Xaa Ser  
1                    5

(2) INFORMATION FOR SEQ ID NO:39:

(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 14 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide



(ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 1  
 (D) OTHER INFORMATION: /note= "Xaa in the first position  
can be absent or is optionally 1-3 amino acids, optionally  
modified with a lower alkyl or lower alkanoyl."

(ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 2  
 (D) OTHER INFORMATION: /note= "Ser in position 2 is  
optionally modified with a lower alkyl or lower alkanoyl, when  
it is the N terminal amino acid."

(ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 4  
 (D) OTHER INFORMATION: /note= "The 4th position amino acid  
can be Asn or Thr."

(ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 7  
 (D) OTHER INFORMATION: /note= "The 7th position amino acid  
can be Ala or Val."

(ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 13  
 (D) OTHER INFORMATION: /note= "Pro in position 13 is  
optionally amidated when it is the C terminal amino acid."

(ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 14  
 (D) OTHER INFORMATION: /note= "Xaa in position 14 can be  
absent or is optionally 1-3 amino acids, optionally substituted  
with an amide."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

Xaa	Ser	Gln	Xaa	His	Gln	Xaa	Ser	Leu	Ser	Lys	Gln	Pro	Xaa
1				5					10				

(2) INFORMATION FOR SEQ ID NO:40:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 12 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

Ser Gln Thr His Gln Ala Ser Leu Ser Lys Gln Pro  
1 5 10

(2) INFORMATION FOR SEQ ID NO:41:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

Asp His Arg Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:42:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

Asp Pro Asn Leu Asp Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:43:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

Asp Pro Asn Ile Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:44:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

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(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

Asp Pro Asn Leu Glu Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:45:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

Val Asp Pro Lys Leu Glu Pro Trp Lys His Pro Gly Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:46:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

Val Asp Pro Ser Leu Glu Pro Trp Lys His Pro Gly Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:47:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

Val Asp Pro Asn Leu Glu Pro Trp Lys His Pro Gly Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:48:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 13 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

Val Asn Pro Ser Leu Glu Pro Trp Lys His Pro Gly Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:49:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 13 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

Val Asp His Arg Leu Glu Pro Trp Lys His Pro Gly Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:50:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

Arg Arg Ala Pro Pro Asp Asn  
1 5

(2) INFORMATION FOR SEQ ID NO:51:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

Arg Arg Ala Pro Gln Gly Asn  
1 5

(2) INFORMATION FOR SEQ ID NO:52:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

Arg Gln Arg Arg Arg Ala His Gln Asn Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:53:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

Arg Gln Arg Arg Arg Pro Pro Gln Asp Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:54:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:

Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser  
1 5 10 15  
Gln Pro Lys Thr Ala  
20

(2) INFORMATION FOR SEQ ID NO:55:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 36 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:

Phe Ile Thr Lys Gly Leu Gly Ile Ser Tyr Gly Arg Lys Lys Arg Arg  
1                  5                  10                  15  
Gln Arg Arg Arg Ala Pro Gln Asp Ser Gln Thr His Gln Val Ser Leu  
                  20                  25                  30  
Ser Lys Gln Pro  
                  35

(2) INFORMATION FOR SEQ ID NO:56:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 9 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:

Glu Pro Val Asp Pro Lys Leu Glu Pro  
1                  5

(2) INFORMATION FOR SEQ ID NO:57:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 7 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:

Val Asp Pro Lys Leu Gly Pro  
1                  5

(2) INFORMATION FOR SEQ ID NO:58:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 13 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (ix) FEATURE:
  - (A) NAME/KEY: Modified-site
  - (B) LOCATION: 4
  - (D) OTHER INFORMATION: /note= "Amino acid in position 4 can be Arg, Lys, Ser or Asn."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:

Val	Asp	Pro	Xaa	Leu	Glu	Pro	Tyr	Lys	His	Pro	Gly	Ser
1				5					10			

(2) INFORMATION FOR SEQ ID NO:59:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

Arg	Gln	Arg	Arg	Arg	Pro	Pro	Gln	Gly	Ser
1				5				10	

(2) INFORMATION FOR SEQ ID NO:60:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:

Arg	Gln	Arg	Arg	Gly	Pro	Pro	Gln	Gly	Ser
1				5				10	

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(ii) MOLECULE TYPE: peptide

Arg Gln Arg Arg Arg Pro Pro Gln Asn Ser  
1 5 10

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:

Arg Gln Arg Arg Arg Ser Pro Gln Asp Ser  
1 5 10

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

Arg Gln Arg Arg Arg Ser Pro Gln Asn Ser  
1 5 10

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

24



(xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:

Arg Gln Arg Arg Arg Thr Pro Gln Ser Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:65:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:

Arg Gln Arg Arg Arg Ala His Gln Asp Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:66:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:

Arg Gln Arg Arg Arg Ala Pro Pro Asp Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:67:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 22

(D) OTHER INFORMATION: /note= "An amide is attached to the  
Lys in position 22."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:

Cys Glu Pro Val Asp Pro Lys Leu Glu Pro Trp Lys Glu Leu Gly Ile  
1 5 10 15

Ser Tyr Gly Arg Lys Lys  
20

(2) INFORMATION FOR SEQ ID NO:68:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:

Arg Arg Thr Pro Gln Gly Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:69:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:

Arg Arg Ala Pro Gln Gly Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:70:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:

Arg Arg Thr Pro Gln Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:71:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 18 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:

Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser Gln Pro Lys  
1                      5                      10                      15  
Thr Ala

(2) INFORMATION FOR SEQ ID NO:72:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:

Arg Arg Ala Pro Gln Asn Ser  
1                      5

(2) INFORMATION FOR SEQ ID NO:73:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:

Arg Arg Ser Pro Gln Asp Ser  
1                      5

(2) INFORMATION FOR SEQ ID NO:74:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 11 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:

Cys Arg Gln Arg Arg Arg Ala Pro Gln Asp Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:75:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:

Arg Arg Pro Pro Gln Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:76:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:

Arg Arg Pro Pro Gln Asn Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:77:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:77:

Arg Arg Pro Pro Gln Gly Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:78:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:

Arg Arg Ser Pro Gln Asn Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:79:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:

Arg Arg Ala Pro Gln Ser Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:80:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:

Arg Arg Ser Pro Gln Gly Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:81:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:81:

Arg Arg Thr Pro Gln Asn Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:82:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:82:

Arg Gln Arg Gln Arg Ala Pro Asp Ser Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:83:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:83:

Arg Gln Arg Arg Arg Ala Pro Glu Asp Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:84:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 13 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Binding-site
- (B) LOCATION: 13
- (D) OTHER INFORMATION: /note= "an amide is attached to the Ser in position 13"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:84:

Cys Val Asp Pro Asn Leu Glu Pro Trp His Pro Gly Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:85:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 17 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:85:

Ser	Gly	Ser	Gly	Val	Asp	Pro	Asn	Leu	Glu	Pro	Trp	Lys	His	Pro	Gly
1				5					10					15	

Ser

(2) INFORMATION FOR SEQ ID NO:86:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 4
- (D) OTHER INFORMATION: /note= "Amino acid in position 4 can be Arg, Lys, Ser or Asn."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:86:

Val	Asp	Pro	Xaa	Leu	Glu	Pro
1				5		

(2) INFORMATION FOR SEQ ID NO:87:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 11 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /note= "Amino acid in position 2 can be Gly or Ala"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:87:

Lys Xaa Leu Gly Ile Ser Tyr Gly Arg Lys Lys  
1 5 10

(2) INFORMATION FOR SEQ ID NO:88:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /note= "Amino acid in position 3 can be Ala, Pro, Ser or Gln."

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 4
- (D) OTHER INFORMATION: /note= "Amino acid in position 4 can be Pro or His."

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 5
- (D) OTHER INFORMATION: /note= "Amino acid in position 5 can be Gln or Pro."

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 6
- (D) OTHER INFORMATION: /note= "Amino acid in position 6 can be Asp, Asn, Gly or Ser."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:88:

Arg Arg Xaa Xaa Xaa Xaa Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:89:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 12 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide



(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 3  
    (D) OTHER INFORMATION: /note= "Amino acid in position 3  
can be Asn or Thr."

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 6  
    (D) OTHER INFORMATION: /note= "Amino acid in position 6  
can be Ala or Val."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:89:

Ser	Gln	Xaa	His	Gln	Xaa	Ser	Leu	Ser	Lys	Gln	Pro
1				5					10		

(2) INFORMATION FOR SEQ ID NO:90:

(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 4 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:90:

Gly Ser Gly Ser  
1

(2) INFORMATION FOR SEQ ID NO:91:

(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 4 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 4  
    (D) OTHER INFORMATION: /note= "Biocytin-amide is attached  
to Ser in position 4."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:91:

Gly Ser Gly Ser  
1

(2) INFORMATION FOR SEQ ID NO:92:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 8 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 8
- (D) OTHER INFORMATION: /note= "NH2 is attached to the Trp in position 8"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:92:

Val Asp Pro Arg Leu Glu Pro Trp  
1 5

(2) INFORMATION FOR SEQ ID NO:93:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 7
- (D) OTHER INFORMATION: /note= "NH2 is attached to Pro in position 7"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:93:

Val Asp Pro Arg Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:94:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 6  
    (D) OTHER INFORMATION: /note= "NH2 is attached to the Glu  
in position 6"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:94:

Val Asp Pro Arg Leu Glu  
1                    5

(2) INFORMATION FOR SEQ ID NO:95:

(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 5 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:95:

Val Asp Pro Arg Leu  
1                    5

(2) INFORMATION FOR SEQ ID NO:96:

(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 7 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:96:

Asp Pro Arg Leu Glu Pro Trp  
1                    5

(2) INFORMATION FOR SEQ ID NO:97:

(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 6 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:97:

Gly Pro Arg Leu Glu Pro  
1                    5

(2) INFORMATION FOR SEQ ID NO:98:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:98:

Ala Pro Arg Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:99:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:99:

Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser  
1 5 10 15

(2) INFORMATION FOR SEQ ID NO:100:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 11 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:100:

Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro  
1 5 10

(2) INFORMATION FOR SEQ ID NO:101:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:101:

Val Asp Pro Arg Leu Glu Pro Trp Lys  
1 5

(2) INFORMATION FOR SEQ ID NO:102:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 7  
(D) OTHER INFORMATION: /note= "NH2 is attached to Pro in  
position 7"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:102:

Val Asp Pro Arg Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:103:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:103:

Met Asp Pro Val Asp Pro Arg Leu Glu Pro  
1 5 10

(2) INFORMATION FOR SEQ ID NO:104:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:104:

Met Asp Pro Val Asp Pro Arg Leu Glu Pro Trp Lys  
1 5 10

(2) INFORMATION FOR SEQ ID NO:105:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 18 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:105:

Phe Ile Thr Lys Gly Leu Gly Ile Ser Tyr Gly Arg Lys Lys Arg Arg  
1                      5                      10                      15  
  
Gln Arg

(2) INFORMATION FOR SEQ ID NO:106:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 11 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:106:

Lys Ala Leu Gly Ile Ser Tyr Gly Arg Lys Lys  
1                      5                      10

(2) INFORMATION FOR SEQ ID NO:107:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 10
- (D) OTHER INFORMATION: /note= "NH2 is attached to Ser in position 10"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:107:

Arg Gln Arg Arg Arg Ala Pro Gln Asp Ser  
1                      5                      10

(2) INFORMATION FOR SEQ ID NO:108:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 8 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (ix) FEATURE:
  - (A) NAME/KEY: Modified-site
  - (B) LOCATION: 8
  - (D) OTHER INFORMATION: /note= "NH2 is attached to Ser in position 8"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:108:

Gly Arg Arg Ala Pro Gln Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:109:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 11 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (ix) FEATURE:
  - (A) NAME/KEY: Modified-site
  - (B) LOCATION: 11
  - (D) OTHER INFORMATION: /note= "NH2 is attached to Gln in position 11"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:109:

Arg Arg Ala Pro Gln Asp Ser Gln Thr His Gln  
1 5 10

(2) INFORMATION FOR SEQ ID NO:110:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (ix) FEATURE:
  - (A) NAME/KEY: Modified-site
  - (B) LOCATION: 3
  - (D) OTHER INFORMATION: /note= "Amino acid in position 3 can be Ala, Pro, Ser or Gln"

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 6  
    (D) OTHER INFORMATION: /note= "Amino acid in position 6  
can be Asp, Asn, Gly or Ser"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:110:

Arg Arg Xaa Pro Gln Xaa Ser  
1                    5

(2) INFORMATION FOR SEQ ID NO:111:

(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 13 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:111:

Ser Gln Thr His Gln Val Ser Leu Ser Lys Gln Pro Cys  
1                    5                    10

(2) INFORMATION FOR SEQ ID NO:112:

(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 12 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:112:

Ser Gln Thr His Gln Val Ser Leu Ser Lys Gln Pro  
1                    5                    10

(2) INFORMATION FOR SEQ ID NO:113:

(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 12 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:113:

Ser Gln Asn His Gln Val Ser Leu Ser Lys Gln Pro  
1                    5                    10



(2) INFORMATION FOR SEQ ID NO:114:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 12 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:114:

Ser	Gln	Thr	His	Gln	Ala	Ser	Leu	Ser	Lys	Gln	Pro
1				5					10		

(2) INFORMATION FOR SEQ ID NO:115:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 13 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:115:

Val	Asp	Pro	Asn	Leu	Glu	Pro	Trp	Lys	His	Pro	Gly	Ser
1				5					10			

(2) INFORMATION FOR SEQ ID NO:116:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 14 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 14
- (D) OTHER INFORMATION: /note= "An amide is attached to Ser in position 14"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:116:

Cys	Val	Asp	Pro	Asn	Leu	Glu	Pro	Trp	Lys	His	Pro	Gly	Ser
1				5					10				

(2) INFORMATION FOR SEQ ID NO:117:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:117:

Cys	Arg	Gln	Arg	Arg	Arg	Ala	Pro	Asp	Ser	Ser	Gln	Asn	His	Gln
1				5					10					15

(2) INFORMATION FOR SEQ ID NO:118:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:118:

Glu	Pro	Val	Asp	Pro	Lys	Leu	Glu	Pro
1				5				

(2) INFORMATION FOR SEQ ID NO:119:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:119:

Glu	Pro	Val	Asp	Pro	Ser	Leu	Glu	Pro
1				5				

(2) INFORMATION FOR SEQ ID NO:120:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:120:

Glu Pro Val Asp Pro Asn Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:121:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:121:

Arg Arg Ala His Gln Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:122:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:122:

Ser Gln Thr His Gln Val Ser Leu Ser Lys Gln Pro  
1 5 10

(2) INFORMATION FOR SEQ ID NO:123:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 4 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 1  
(D) OTHER INFORMATION: /note= "Biotin is attached to Ser  
in position 1"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:123:

Ser Gly Ser Gly  
1

[illegible]

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- ```

      (A) NAME/KEY: Modified-site
      (B) LOCATION: 7
      (D) OTHER INFORMATION: /note= "Amino acid in position 7
can be Arg, Lys Ser or Asn"

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:124:

Glu Pro Val Asp Pro Xaa Leu Glu Pro  
1 5